

PHILLIPS et al.
Appl. No. 10/551,698
Atty. Ref.: 620-393
Amendment After Final Rejection
June 7, 2011

Please enter these Claims
/Kailash C. Srivastava/
Examiner, GAU 1657
on 06.23.2011

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A tissue growth guide comprising,
an inner core comprising a biopolymer matrix seeded with cells ~~having one or more cells positioned therein, the guide further comprising;~~
an outer sheath surrounding said inner core,
said inner core being tethered ~~fixed~~ to said outer sheath only at opposing ends of said guide ~~a first attachment region and a second attachment region;~~
~~such that said seeded cells providing produce~~ mechanical tension in said core between the tethered opposing ends ~~first and second attachment regions~~.
2. (Previously Presented) A guide according to claim 1 wherein the mechanical tension in said core causes alignment of the cells.
3. (Previously Presented) A guide according to claim 1 wherein the mechanical tension in said core causes alignment of the fibres of said biopolymer matrix.
4. (Previously Presented) A guide according to claim 1 wherein the biopolymer matrix is a collagen matrix.
5. (Previously Presented) A guide according to claim 1 adapted for use as an implant in the repair of damaged tissue.
6. (Previously Presented) A guide according to claim 5 wherein the sheath comprises one or more entry ports for entry of regenerating tissue.

7. (Previously Presented) A guide according to claim 5 adapted for the regeneration of nerves.

8. (Original) A guide according to claim 7 wherein the sheath comprises an entry port for entry of regenerating nerve and an exit port for exit of a regenerating nerve.

9. (Original) A guide according to claim 8 comprising one or more fixings for fixing in place the entry point adjacent to the proximal end of a damaged nerve and the exit point at the distal end of a damaged nerve.

10. (Previously Presented) A guide according to claim 5 wherein the mechanical tension in the core imparts traction on regenerating tissue in the guide

11. (Currently Amended) A guide according to claim 1 wherein said seeded cells comprise one or more of Schwann cells, neural fibroblasts, fibroblasts, tenocytes, astrocytes, osteoblasts, myoblasts, melanocytes, smooth muscle cells, secretory or gland vessel cells, epithelial cells and endothelial cells.

12. (Currently Amended) A guide according to claim 1₁ wherein said cells comprise Schwann cells and fibroblasts.

13. (Previously Presented) A guide according to claim 1 wherein said sheath is biosorbable.

14. (Previously Presented) A guide according to claim 1 wherein said sheath is non-porous.

15. (Currently Amended) A guide according to claim 1 wherein said sheath is selected from the group consisting of ~~silicone~~,

~~phosphate glass~~, silicone, phosphate glass, polylactone, polyglycone, polycapryolactone, hyaluronan or derivatives thereof, collagen, fibrin, fibronectin, cellulose, chitosan, and starch.

Claim 16. (Canceled)

17. (Original) A guide according to claim 16 wherein said outer sheath is shaped to cooperatively engage the inner core at the first and second attachment regions to prevent co-axial movement of the core relative to the sheath.

18. (Currently Amended) A guide according to claim 17 wherein said sheath comprises one or more openings which cooperatively engage the inner core at the opposing ends~~first and second attachment regions~~.

19. (Original) A guide according to claim 18 wherein said openings comprise a plurality of pores.

20. (Original) A guide according to claim 18 wherein said openings comprise one or more holes in the sheath.

21. (Currently Amended) A guide according to claim 1 wherein the sheath is chemically fixed to the core at the tethered ends~~first and second attachment regions~~.

22. (Previously Presented) A guide according to claim 1 adapted for *in vitro* use as a bioreactor for the growth of tissue.

23. (Currently Amended) A method of making a guide for tissue growth comprising;

providing an outer sheath,

introducing cells to a liquid biopolymer matrix to produce a cell seeded matrix,

introducing said cell seeded liquid matrix to the interior of the outer sheath,

causing or allowing said cell seeded liquid matrix to set; and,

fixing the matrix to the sheath to tether said cell seeded matrix to only the ends of said outer sheath ~~a first and second attachment region~~.

24. (Currently Amended) A method according to claim 23 wherein the sheath cooperatively engages the matrix at the ends of said outer sheath ~~first and second attachment regions~~, said engagement preventing co-axial movement of the core relative to the sheath.

Claim 25. (Canceled)

26. (Currently Amended) A method of facilitating growth of tissues in a human or animal body according to claim 23 comprising implanting said a tissue growth guide of claim 1 into a human or animal body in need of said facilitating.

27. (Previously Presented) A method according to claim 23 wherein the cells comprise fibroblasts and one or more cells of said tissue.

28. (Previously Presented) A method according to claim 23 wherein the tissue cells comprise fibroblasts and one or more stem cells or progenitor cells of cells of said tissue.

29. (Currently Amended) A method of claim 26, further comprising ~~repairing~~
~~tissue damage comprising;~~
~~providing a tissue growth guide comprising;~~
~~an inner core comprising a biopolymer matrix having one or more cells positioned~~
~~therein,~~
~~the guide further comprising;~~
~~an outer sheath surrounding said inner core,~~
~~said inner core being fixed to said outer sheath at a first attachment region and a~~
~~second attachment region;~~
~~such that said cells produce mechanical tension in said core between the first~~
~~and second attachment regions;~~
~~linking a first and a second ends~~ of the tissue growth guide to ~~[[the]]~~ broken ends
of a damaged tissue in the human or animal ~~an individual~~, and;
allowing said tissue to regenerate through said guide.

30. (Original) A method according to claim 29 wherein the damaged tissue is a
nerve.